(19) World Intellectual Property Organization International Bureau

International Bureau



(43) International Publication Date 8 April 2004 (08.04.2004)

PCT

(10) International Publication Number WO 2004/028742 A3

(51) International Patent Classification⁷: B
3/28, 3/32

B24B 3/26,

(21) International Application Number:

PCT/US2003/030033

(22) International Filing Date:

26 September 2003 (26.09.2003)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

60/413,772

27 September 2002 (27.09.2002) US

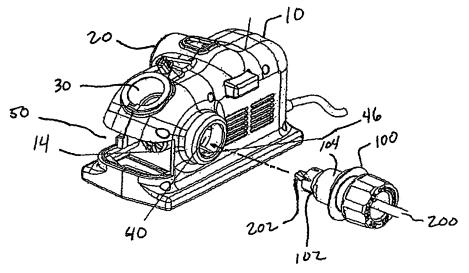
- (71) Applicant (for all designated States except US): PROFES-SIONAL TOOL MANUFACTURING LLC [US/US]; 210 East Hersey Street, P.O. Box 730, Ashland, OR 97520 (US).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): BERNARD, David [US/US]; 378 Terrace Street, Ashland, OR 97520 (US). CHRISTIAN, William [US/US]; 778 Oak Street, Ashland, OR 97520 (US). HARRIS, Scott [US/US]; 1990

Teakwood Drive, Eagle Point, OR 97524 (US). MOST-TLER, Keith [US/US]; 13234 Antioch Road, White City, OR 97530 (US).

- (74) Agent: KERINS, John, C.; Miles & Stockbridge P.C., 1751 Pinnacle Drive, Suite 500, McLean, VA 22102-3833 (US).
- (81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

[Continued on next page]

(54) Title: DRILL SHARPENER



(57) Abstract: A drill sharpener is provided which has a point-splitting port which simplifies the procedure for producing a split point on a drill bit (200) undergoing sharpening. The point-splitting port (40) is positioned relative to a grinding wheel assembly (14) such that, when the drill held by a chuck (100) that is advanced toward the grinding wheel, a flute of the drill at the drill tip is brought into contact with the grinding wheel. The port has alignment stops (42) therein which mate with flats provided on the barrel of the chuck to ensure proper alignment of the chuck and drill relative to the grinding wheel. The stops also limit the extent of inward travel of the chuck and drill to a predetermined distance. A debris or grit collection tube (60) is also provided to be inserted into an unused port of the drill sharpener, to contain and confine any debris or grit attempting to exit the sharpener through the unused port.

0004/008742 A3



Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

 $\begin{tabular}{ll} \textbf{(88)} & \textbf{Date of publication of the international search report:} \\ \end{tabular}$

15 July 2004

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US03/30033

A. CLASSIFICATION OF SUBJECT MATTER		
IPC(7) : B24B 3/26, 28, 32 US CL : 451/48, 349, 453		
According to International Patent Classification (IPC) or to both national classification and IPC		
B. FIELDS SEARCHED		
Minimum documentation searched (classification system followed by classification symbols) U.S.: 451/48, 349, 453		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched		
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category * Citation of document, with indication, wher		Relevant to claim No.
	US 5,735,732 A (BERNARD) 07 April 1998 (07.04.1998), see figures 8, 11, 12	
Y		13-16
Y US 2,426,478 A (WHIPPLE) 26 August 1947 (26	6.08.1947), see figures 1, 4 and 5	13-16
·		
Further documents are listed in the continuation of Box C. See patent family annex.		
Special categories of cited documents:	"T" later document published after the international filing date or priority	
"A" document defining the general state of the art which is not considered to be of particular relevance	date and not in conflict with the application but cited to understand the principle or theory underlying the invention	
"E" earlier application or patent published on or after the international filing da	"X" document of particular relevance; the considered novel or cannot be considered.	
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special teason (as specified)	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination	
"O" document referring to an oral disclosure, use, exhibition or other means	being obvious to a person skilled in the art	
"P" document published prior to the international filing date but later than the priority date claimed	"&" document member of the same patent family	
Date of the actual completion of the international search	Date of mailing of the international search report O7 MAY 2004	
20 April 2004 (20.04.2004)		U4 /
Name and mailing address of the ISA/US	Authorized officer	Thero Jeney
Mail Stop PCT, Attn: ISA/US Commissioner for Patents	N Dachuha	neur n. veney
P.O. Box 1450 Alexandria, Virginia 22313-1450 Faccimile No. (703) 305-3230	Telephone No. 703-308-1148	ralegal Specialist ech. Center 3700